4 December 2015

Mr. Parry Klassen
Executive Director
East San Joaquin Water Quality Coalition
1201 L Street
Modesto, CA 95354

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APPROVAL OF MANAGEMENT PLAN COMPLETION – EAST SAN JOAQUIN WATER QUALITY COALITION

Thank you for submitting the 5 June 2014 request to remove specific constituents from select East San Joaquin Water Quality Coalition (Coalition) site subwatershed management plans. The request proposes to remove 18 site/constituent pairs from active management plan status and from the management plan monitoring schedule.

The Coalition has implemented management plans according to requirements in the Waste Discharge Requirements General Order R5-2012-0116-R3 for Growers within the Eastern San Joaquin River Watershed that are Members of a Third-party Group (Order). The Coalition's approved Management Plan (4 November 2015) has been implemented as a part of the Order. The conditions for requesting completion of a Management Plan outlined in the Order apply (Attachment B, Appendix MRP-1, Section III, pages 8 and 9).

Based on the information provided in the request letter and in the enclosed staff review, I approve the completion of management plans for the following twelve site/constituent pairs:

- Dry Creek @ Wellsford Rd (*Ceriodaphnia dubia*)
- Highline Canal @ Hwy 99 (*Ceriodaphnia dubia* and *Hyalella azteca*)
- Highline Canal @ Lombardy Rd (*Hyalella azteca*)
- Merced River @ Santa Fe (lead, *Ceriodaphnia dubia* and chlorpyrifos)
- Duck Slough @ Gurr Rd (copper)
- Cottonwood Creek @ Rd 20 (lead, dissolved oxygen)
- Dry Creek @ Rd 18 (chlorpyrifos, dissolved oxygen)

Implementation of management plans must continue for Prairie Flower Drain @ Crows Landing Rd (*Hyalella azteca*) and Dry Creek @ Wellsford Rd (chlorpyrifos) because the monitoring data do not support completion of the management plan.

The Coalition's request to complete dissolved oxygen (DO) management plans from four sites based on a proposal to lower the Water Quality Trigger Limit for DO in the revised Surface Water Quality Management Plan will be addressed in a separate letter.

If you have any questions or comments regarding this letter, or need further information, please contact Yared Kebede at yared.kebede@waterboards.ca.gov or by phone at 916-464-4828.

Sincerely,

Original signed by

Pamela C. Creedon
Executive Officer

Enclosures: Staff Review of Request to Remove Constituents from Management Plan – East San Joaquin Water Quality Coalition

TO: Susan Fregien
Senior Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

FROM: Yared Kebede
Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

DATE: 3 December 2015

SUBJECT: REQUEST TO REMOVE CONSTITUENTS FROM MANAGEMENT PLAN – EAST SAN JOAQUIN WATER QUALITY COALITION

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) received a request from the East San Joaquin Water Quality Coalition (Coalition) on 5 June 2014 to remove a total of 18 site/constituent pairs from the management plan monitoring schedule. The Coalition's request to complete dissolved oxygen (DO) management plans from Duck Slough @ Gurr Rd, Hilmar Drain @ Central Ave, Miles Creek @ Reilly Rd and Unnamed Drain @ Hwy 140, were not addressed as part of this review. Staff requested the Coalition to submit additional information to justify the reduction of the DO trigger limit to 5 mg/L for these waterbodies. However, staff evaluated the removal of DO management plans from Cottonwood Creek @ Rd 20 and Dry Creek @ Rd 18 based on the 5 mg/L DO trigger limit that was approved for use in these waterbodies.

Based on the Waste Discharge Requirements for Growers within the Eastern San Joaquin River Watershed Order R5-2012-0116-R3 (Order) at least three years of compliance with receiving water limitations during the times of year when previous exceedances occurred, documented education and outreach, and implementation of management practices to address the water quality problems must be demonstrated before management plan can be petitioned for completion (Section III of the MRP-1).

Staff reviewed the Coalition's request and evaluated whether completion of management plans for petitioned site/constituent pairs is justified. The following staff recommendations are organized based on the two categories (I) there is sufficient information to justify the removal of site/constituent pairs from the management plan or (II) the completion of management plans cannot be recommended because of exceedances of water quality objectives.

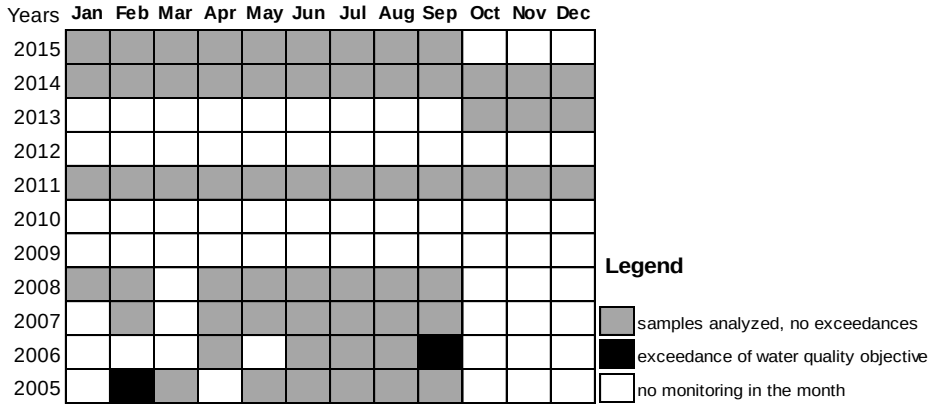
I. Management plan no longer required

Management Plan	Most Recent Exceedance	Monitoring Events Since Exceedance	Demonstrated Compliance Sufficient?	Approve?
A. *Ceriodaphnia* in Dry Creek @ Wellsford Rd	2006	51	✓	YES
B. *Ceriodaphnia* in Highline Canal @ Hwy 99	2006	53	✓	YES
C. *Hyalella* in Highline Canal @ Hwy 99	2008	10	✓	YES
D. *Hyalella* in Highline Canal @ Lombardy	2008	10	✓	YES
E. Lead in Merced River @ Santa Fe	2008	33	✓	YES
F. *Ceriodaphnia* in Merced River @ Santa Fe	2008	48	✓	YES
G. Chlorpyrifos in Merced River @ Santa Fe	2008	46	✓	YES
H. Copper in Duck Slough @ Gurr Rd	2009	44	✓	YES
I. Lead in Cottonwood Creek @ Rd 20	2008	22	✓	YES
J. Chlorpyrifos in Dry Creek @ Rd 18	2008	30	✓	YES
K. Dissolved oxygen in Cottonwood Creek @ Rd 20	2007	84	✓	YES
L. Dissolved oxygen in Dry Creek @ Rd 18	2008	45	✓	YES

Staff recommends that management plans are no longer required for twelve site/constituent pairs since there has been sufficient monitoring to demonstrate that water quality problems are no longer occurring. Since the most recent exceedance, education and outreach, implemented management practices in each subwatershed, and demonstration of the effectiveness of the management practices justify the removal of the site/constituent pairs from the management plans.

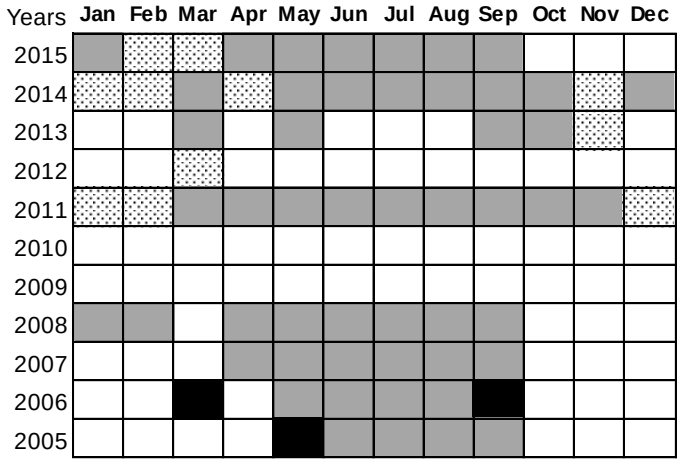
Further details about each category of site/constituent pairs petitioned for the completion of management plans are provided below:

A. *Ceriodaphnia dubia* in Dry Creek @ Wellsford Rd

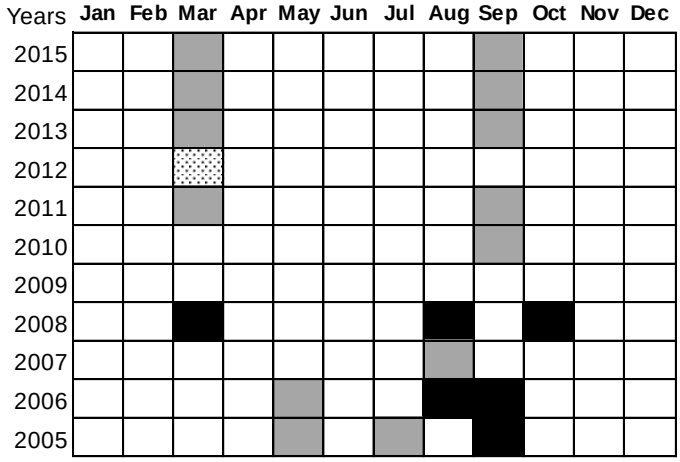


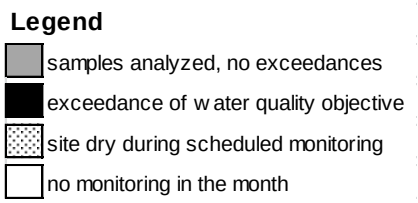
Dry Creek @ Wellsford Rd is a first high priority site subwatershed where focused outreach occurred from 2008 to 2010. Toxicity Identification Evaluations (TIEs) were not required for two instances of *C. dubia* toxicity in February 2005 (80% survival) and September 2006 (70% survival). There were no pesticide exceedances during either sampling event. Between 2009 and 2011, the Coalition contacted 25 targeted growers representing 27% of the total direct drainage acreage within the subwatershed (2011 MPUR, Table 8). According to the survey and follow up results, targeted growers implemented management practices including shutting off outside nozzles when spraying next to surface water, constructing drainage basins, maintaining filter strips, using tailwater return systems, and using less water during surface irrigation. Targeted growers also implemented management practices that were not specifically recommended by the Coalition. The Coalition has completed more than three years of monitoring with no *C. dubia* toxicity.

B. *Ceriodaphnia dubia* in Highline Canal @ Hwy 99



C. *Hyalella azteca* in Highline Canal @ Hwy 99



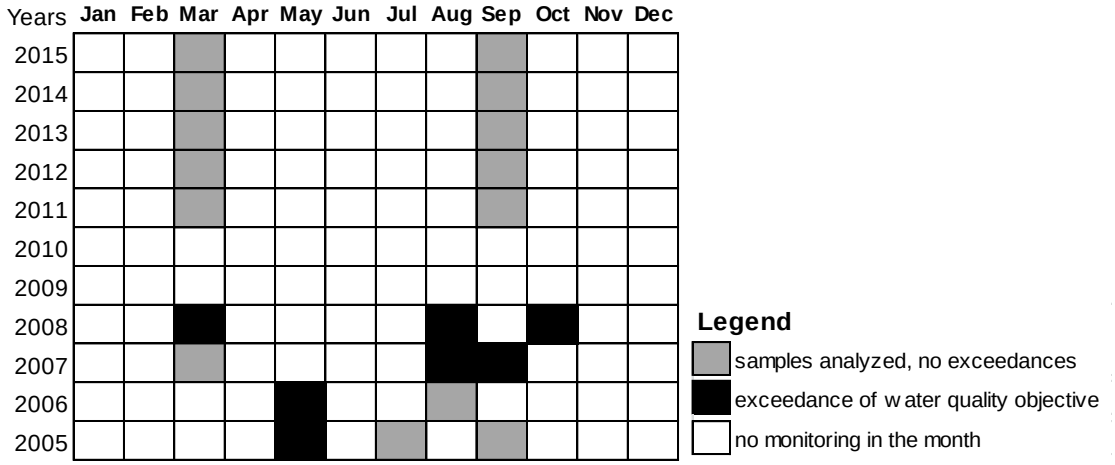


The management plan for *C. dubia* toxicity at Highline Canal @ Hwy 99 was due to exceedances in May 2005 (47% survival), March 2006 (0% survival) and September 2006 (67% survival). The TIE results were not conclusive either due to lack of pesticide detection or no exceedances of the respective Water Quality Trigger Limits (WQTLs). Since the September 2006 exceedance, the Coalition has completed more than three years of monitoring with no toxicity to *C. dubia*.

Toxicity to *Hyalella azteca* at Highline Canal @ Hwy 99 has occurred six times including the resampling events in September 2006 and October 2008. The September 2006 sample (80% compared to the control) was considered ecologically significant because survival was 20% less than the control. The Coalition has completed more than three years of monitoring during storm and irrigation seasons with no sediment toxicity.

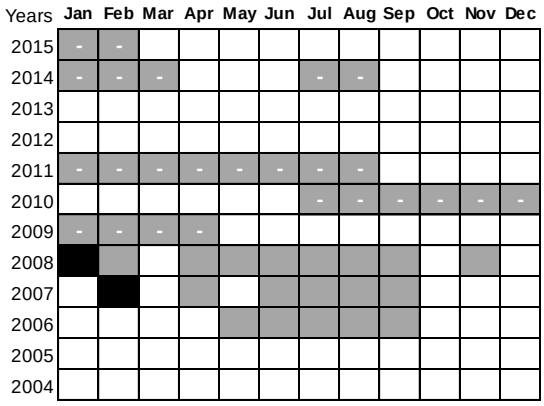
Focused outreach in Highline Canal @ Hwy 99 occurred from 2010 to 2012. The Coalition conducted individual meetings with 10 growers representing 33% of the direct drainage in 2009 and 2010. According to the request, Highline Canal is a raised canal and only a few parcels are able to pump water into the canal. Consequently, the recommended management practices focused on spray drift management. A summary of implemented and recommended management practices is provided in the 2012 MPUR (Pages 95-97). Focused outreach at the upstream Highline Canal @ Lombardy Rd started in 2013, which could further improve the water quality within the downstream reach of Highline Canal.

D. *Hyalella azteca* in Highline Canal @ Lombardy Rd

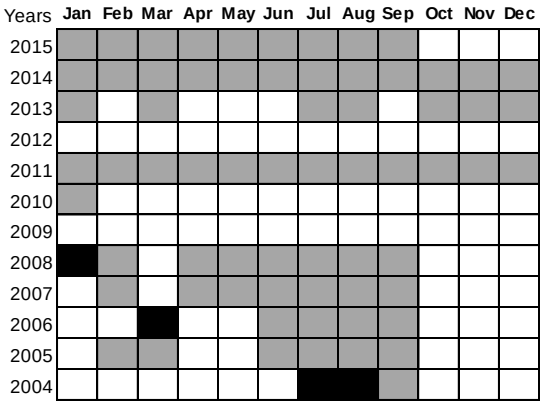


Focused outreach in the Highline Canal @ Lombardy Rd subwatershed began in 2013. The management plan at Highline Canal @ Lombardy Rd is based on seven sediment toxicity exceedances, including the two toxic resamples (September 2007 and October 2008). In 2013, the Coalition contacted twenty targeted growers and documented management practices for 46% of the acreage with direct drainage in the site subwatershed. Growers implemented additional practices recommended by the Coalition, including spray areas close to waterbodies when the wind is blowing away, use air blast applications when wind is between 3-10 mph and upwind of a sensitive site, and installed a device to control timing of pump/drain into waterway. Since no exceedances occurred from 2011-2015, the Coalition has met the water quality objective for more than three years during months of past exceedances.

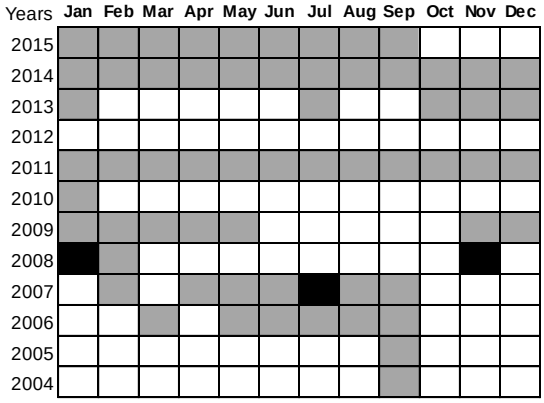
E. Lead in Merced River @ Santa Fe



F. *Ceriodaphnia dubia* in Merced River @ Santa Fe



G. Chlorpyrifos in Merced River @ Santa Fe



Legend

- total fraction analyzed, no exceedances
- dissolved fraction analyzed, no exceedances
- exceedance of water quality objective
- no monitoring in the month

The lead management plan in Merced River @ Santa Fe is based on two exceedances of the hardness-based WQTL for total lead in 2007 (February) and 2008 (January). Since the Coalition started analyzing for dissolved lead to assess compliance with water quality objectives of the Order, exceedance of the hardness based WQTLs of lead has not occurred (2009-2015).

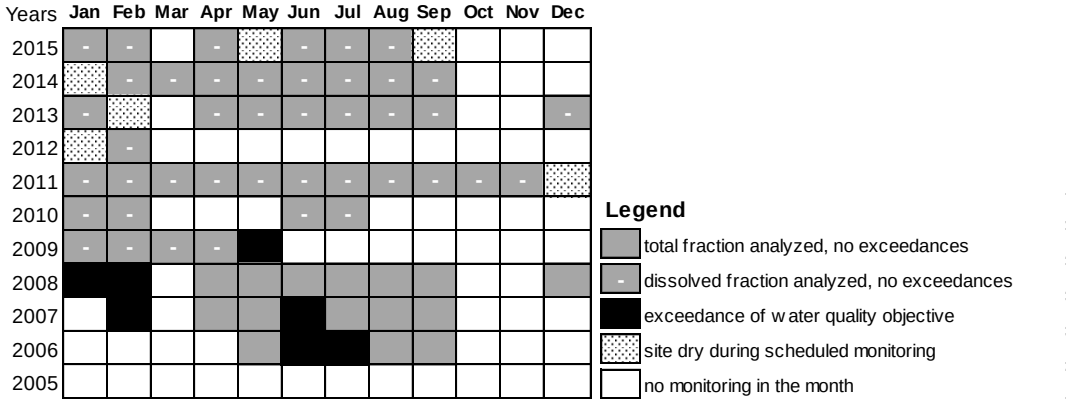
There were four exceedances of *C. dubia* water column toxicity in the Merced River @ Santa Fe subwatershed since the Coalition started monitoring for *C. dubia* in 2004. A TIE conducted for the most recent exceedance in January 2008 implicated organophosphate insecticides as the probable cause of toxicity. In fact, an exceedance of the WQTL for chlorpyrifos (0.59 µg/L) occurred in samples collected during this event.

There were three instances of chlorpyrifos exceedances in Merced River @ Santa Fe in 2007 (July) and 2008 (January, November). The PUR data indicated that chlorpyrifos use in the Merced River @ Santa Fe site subwatershed has declined by 71% in 2013 (2,266 pounds (lbs) Active Ingredient (AI) since the peak use in 2008 (7,699 lbs AI).

Since the focused outreach began in 2013, the Coalition completed contacts with the twelve targeted growers to prevent offsite movement of agricultural constituents in the Merced River subwatershed. Management practices were documented for 34% of the acreage identified as potentially having direct drainage (2015 AMR, Table 48). Growers implemented several management practices to manage irrigation water: microirrigation techniques, tailwater return systems, sediment ponds; erosion and sediment management: grass row centers, vegetated filter strips around field perimeter, vegetation maintained along ditches; and spray management

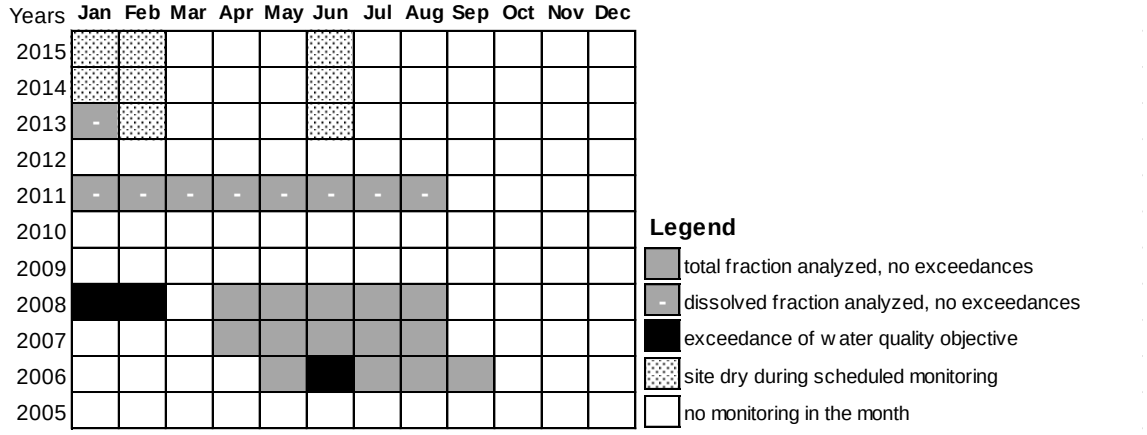
practices: calibrating prior to each spray application, adjusting spray nozzles to match the canopy profile, shutting off outside nozzles. A summary of all management practices are provided in the 2014 (Pages 181-182) and 2015 Annual Reports (Page 158). Monitoring results from more than three years of monitoring since the most recent exceedances in 2008 demonstrated the effectiveness of the implemented management practices in the subwatershed.

H. Copper in Duck Slough @ Gurr Rd



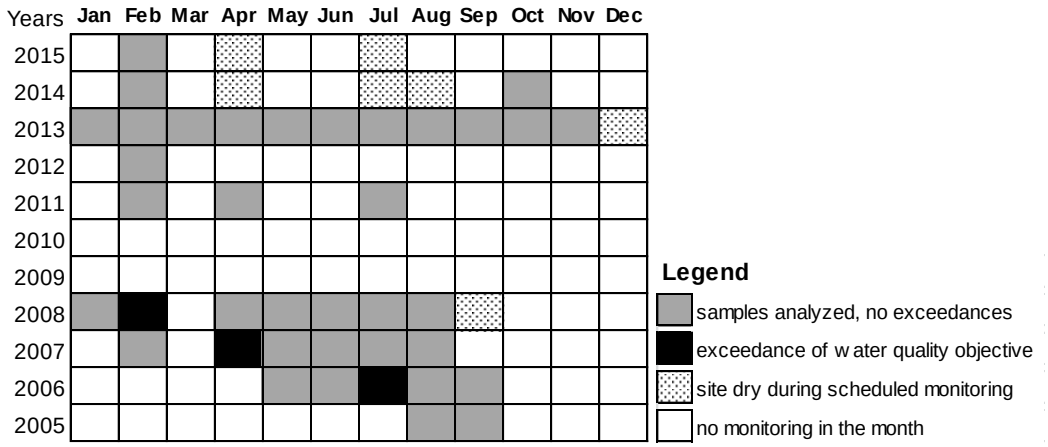
Copper is naturally present in the soil but it is also applied in both agriculture and non-agricultural uses. The PUR data indicate that the year of lowest copper use in the Duck Slough @ Gurr Rd site subwatershed was 2009 (1,950 lbs AI) while the highest copper use was 2011 (7,348 lbs AI). There was approximately a 19% reduction in copper use from 2011 through 2013. Focused outreach to targeted growers occurred from 2010 to 2012. The Coalition contacted six targeted growers who farm 46% of the total direct drainage area in 2010, and provided information to encourage the retention of water and sediment on the field (tailwater return system and sediment ponds). Continued follow-up with all targeted growers was conducted in 2011 to determine the implementation of recommended and/or new management practices. Growers implemented management practices recommended by the Coalition, and took additional steps to manage spray drift. The summary of implemented management practices is documented in the 2012 MPUR (Pages 92-93). Since the May 2009 exceedance, the Coalition has completed more than three years of monitoring of dissolved copper with no exceedances.

I. Lead in Cottonwood Creek @ Rd 20



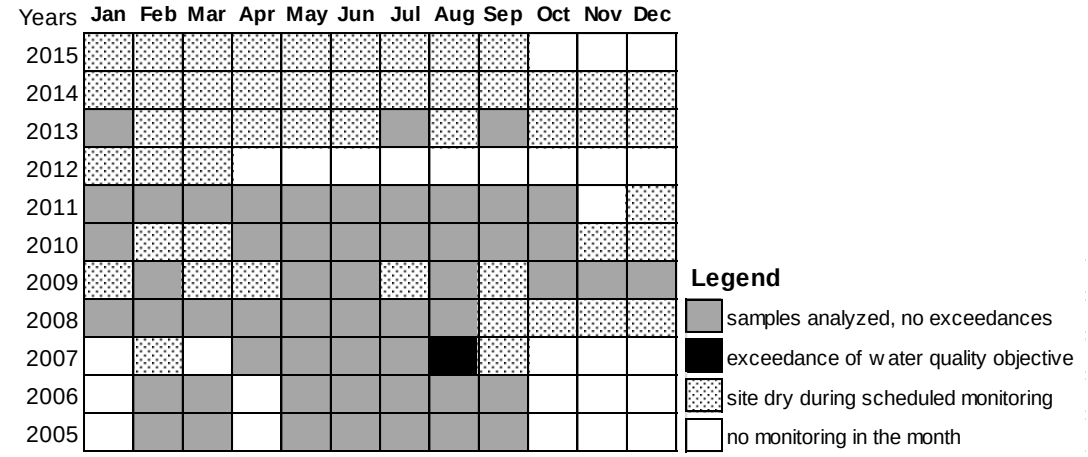
The management plan for lead in Cottonwood Creek @ Rd 20 is based on 3 exceedances of the hardness-based WQTL for total lead, which does not account for the bioavailable fraction (dissolved lead is considered to be the fraction that can affect aquatic life). Since the Coalition started analyzing for dissolved lead which is representative of the bioavailable fraction, there have been no lead exceedances. This is a better representation of whether the water body is achieving water quality criteria. This new information demonstrates that the bioavailable fraction of lead does not exceed criteria in Cottonwood Creek @ Rd 20. Because of this staff recommends completion of the lead management plan.

J. Chlorpyrifos in Dry Creek @ Rd 18



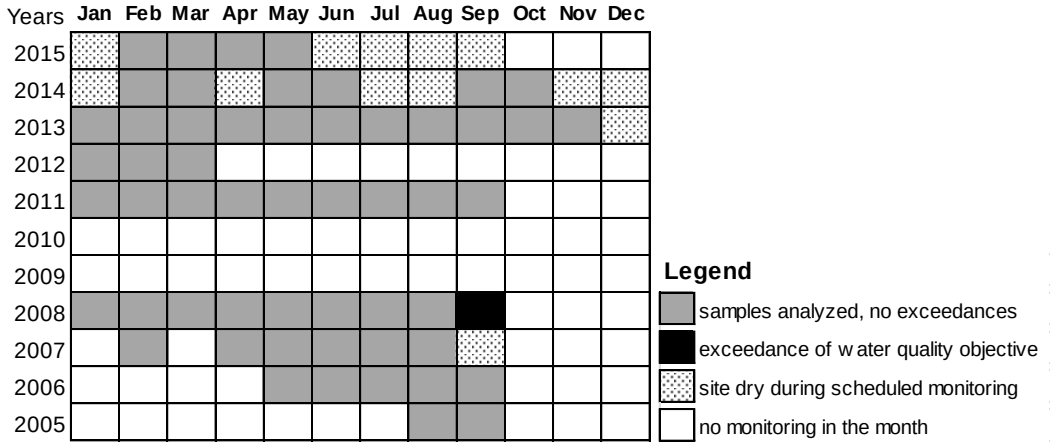
Focused outreach in Dry Creek @ Rd 18 occurred from 2011 to 2013. According to the pesticide use report (2012 MPUR Appendix I, Table IX-8) chlorpyrifos use fluctuated within the subwatershed with peak application in 2007 (4391.5lbs of AI) and lowest application in 2008 (498.8 lbs AI). The Coalition contacted 17 targeted growers and documented management practices for 53% of the acreage having direct drainage (2013 MPUR, page 34). The majority of targeted growers implemented several irrigation, erosion and sediment, and pest management practices (2012 MPUR pages 107-112). The Coalition recommended additional practices designed to manage spray drift, irrigation tailwater management, and storm water runoff to three growers and documented the newly implemented management practices. Monitoring data, pesticide use and focused outreach efforts justify chlorpyrifos management plan completion.

K. Dissolved Oxygen in Cottonwood Creek @ Rd 20



On 4 November 2015, the Executive Officer approved the Coalition to apply the lower DO trigger limit of 5 mg/L at Cottonwood Creek @ Rd 20. Since the August 2007 exceedance (3.95 mg/L), the Coalition has conducted 36 DO measurements with no exceedances. Measurements of DO based on the approved 5 mg/L trigger limit indicate more than three years of monitoring with no exceedances.

L. Dissolved Oxygen in Dry Creek @ Rd 18

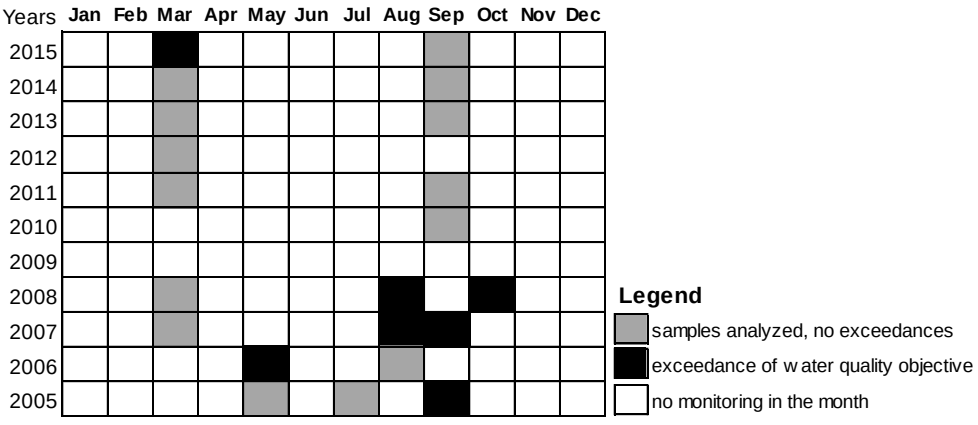


Dry Creek @ Rd 18 is one of the four water bodies that was approved for a DO WQTL of 5 mg/L on 4 November 2015. The Coalition has conducted 33 DO measurements since the September 2008 exceedance (3.97 mg/L), and all results were above the 5 mg/L trigger limit. Based on the 5 mg/L trigger limit a management plan would not have been needed, and the data indicate more than three years of monitoring with no exceedances.

II. Monitoring data do not support completion of the management plan

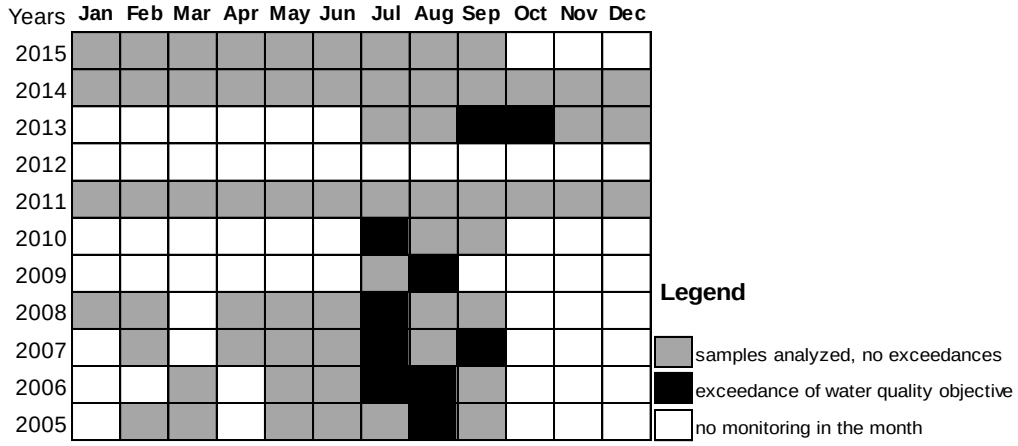
Management Plan	Date of Most Recent Exceedance	Approve?
A. *Hyalella azteca* in Prairie Flowers Drain @ Crows Landing	10 March 2015	NO
B. Chlorpyrifos in Dry Creek @ Wellsford Rd	15 October 2013	NO

A. *Hyalella azteca* in Prairie Flower Drain @ Crows Landing Rd



The *Hyalella azteca* management plan at Prairie Flower Drain @ Crows Landing Rd is based on 7 exceedances from 2005 to 2015. Toxicity was persistent during irrigation seasons in 2007 and 2008. Sediment toxicities that occurred at this site were preceded by exceedances of chlorpyrifos in the water column (2009 SAMR, page 150). The sediment sample collected in March 2015 was toxic to *H. azteca* (0% survival compared to the control). A chlorpyrifos exceedance (4.2 µg/L) coincided with the complete mortality of *H. azteca* during toxicity testing. Chlorpyrifos is under a management plan in the Prairie Flower Drain @ Crows Landing Rd subwatershed. Due to the recent exceedance the Coalition has not met three years of compliance with receiving water limitations.

B. Chlorpyrifos in Dry Creek @ Wellsford Rd



The chlorpyrifos management plan at Dry Creek @ Wellsford Rd is based on 10 exceedances from 2005 to 2013. According to the request, these exceedances (2006 through 2013) of the WQTL were the results of irrigation runoff following summer applications to orchards and vineyards. The highest chlorpyifos use was in 2012 (10,918 lbs AI), up more than three times from 2011 (3,359 lbs AI). Exceedances of the WQTL for chlorpyrifos occurred in September (0.14 µg/L) and October 2013 (0.016 µg/L). As a result of the recent exceedances, the Coalition has not met three years of compliance with the receiving water limitations during the time of the year when previous exceedance occurred.